cmc electronics

March 27th, 2003

Docket Management System,
U.S. Department of Transportation, Room Plaza 401,
400 Seventh Street, SW.,
Washington, DC 20590–0001

Ref: Docket Number FAA–2003–14449, Notice No. 03-03, Enhanced Flight Vision Systems

Dear Ladies and Gentlemen:

CMC Electronics Inc. wishes to provide the following comments to the above referenced docket as published in the Federal Register on February 10th, 2003, Vol. 68, No. 27, page 6802.

INTRODUCTION

We applaud the quick action by the FAA in recognizing the safety benefits of EFVS and also the foresight of the FAA in providing operational benefits to encourage operators to fit EFVS. These operational benefits will also reduce the workload on the air traffic management system in times of reduced visibility when the workload is already high. We believe that the introduction of EFVS is as significant as the introduction of weather radar some 50 years ago.

THE USE OF EFVS IN CONJUNCTION WITH CAT II/III OPERATIONS

We believe that the use of EFVS should not be restricted to any particular phase of flight. The primary benefit of EFVS is to improve safety and situational awareness. If the pilot in command believes that the use of EFVS during let-down, initial approach, final approach, circling, overshoot, etc. is helpful whether the weather conditions are VMC or "zero-zero", he/she should be able to use it. There are reports that EFVS has allowed pilots to avoid turbulence-filled build-ups in cruise at night that were not visible on radar or to the naked eye.

RECOMMENDATION: Not place any restrictions on the use of EFVS at any time during any phase of flight to improve situational awareness.

REQUIRED "VISUAL REFERENCES"

We see no reason to eliminate some of the visual references for EFVS that are permissible for non-EFVS operations. The ten elements listed in §91.175 (c) (3) are all

CMC Electronics Inc., 415 Legget Drive, P.O. Box 13330, Ottawa, Ontario, Canada K2K 2B2
Telephone: (613) 592-6500 Facsimile: (613) 592-7432 www.cmcelectronics.ca

identifiable in an EFVS appropriate for use during approach and landing. Even though current EFVS cannot provide a means to distinguish light colors, future systems may be able to allow the pilot to discriminate between different colors. In any event, a pilot would be able to distinguish the red terminating bars and the red side row bars used in current approach lighting systems based on configuration alone. The runway lights, threshold lights and touch-down zone lights are also very distinctive lights in a poor visibility EFVS scenario.

With reference to our "PERFORMANCE CRITERIA" comment below, once the performance limit for a particular EFVS is reached, the use of that particular EFVS is no longer approved for landing credits and the requirements of §91.175 (c) (3) become applicable. As a result, §91.175 (l) (4) is no longer necessary.

RECOMMENDATION: Delete §91.175 (l) (4) and modify the proposed §91.175 (l) (3) as follows:

(3) At least one of the following visual references for the intended runway is distinctly visible and identifiable to the pilot using the enhanced flight vision system:

(i) The approach light system, except that the pilot may not descend below 100 feet above the touchdown zone elevation using the approach lights as a reference unless the terminating bars or the side row bars are also distinctly visible and identifiable.
(ii) The threshold.
(iii) The threshold markings.
(iv) The threshold lights.
(v) The runway end identifier lights.
(vi) The visual approach slope indicator.
(vii) The touchdown zone or touchdown zone markings.
(viii) The touchdown zone lights.
(ix) The runway or runway markings.
(x) The runway lights.

PART 121, 125 AND 135 APPROACHES

It is not relevant, as far as EFVS is concerned, if the weather has just gone below minimums or has been below minimums for some time. Those aircraft with EFVS being operated under Parts 121, 125 and 135 should be allowed to initiate an approach even though the current weather is reported to be below minimums. None of the current weather reporting devices is capable of reporting the ceiling and visibility that would be experienced by a pilot using an EFVS. Even if such a device was available, the current EFVS conditions reported can change very quickly. Our experience during our proof of concept flights and fog chamber tests on the ground indicates that the weather

penetration capability of an EFVS can change very quickly. Even three to five minutes can make a difference while there may be no discernable difference to the naked eye. In addition, different systems using different technologies can provide different results at different times.

RECOMMENDATION: Allow EFVS-equipped aircraft operating under Parts 121, 125 and 135 to initiate an approach even though the current weather is reported to be below minimums. It might be appropriate to require that the reported weather be above the performance limit of the individual EFVS (see our "PERFORMANCE CRITERIA" comment below).

PERFORMANCE CRITERIA

We believe that it is inappropriate to include specific limits for the use of EFVS in these regulations. A future, higher performance EFVS may be capable of supporting operations all the way to the ground. In addition, new display technology may provide an effective EFVS without the use of current HUDs.

RECOMMENDATION: Delete §91.175 (l) (4) and include the performance limit in the individual system certification criteria. Delete §91.175 (m) (2), (3), (4) and (5) and include the display and symbology characteristics in the individual system certification criteria.

CONCLUSION

We thank the FAA for their proactive attitude. We believe that this proposed rule and the proposed modifications above will result in greatly improved safety and operational efficiency for those operators with EFVS.

Yours very truly
CMC Electronics, Inc.

(osb)

Mike Venables
Marketing Manager, Enhanced Vision Systems

Direct Line: (613) 592-7441
E-Mail: Mike.Venables@cmcelectronics.ca